

Popular summary for:

“A tamarisk habitat suitability map for the continental US” to be published in *Frontiers in Ecology and the Environment*.

Authors:

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Scientific, interdisciplinary grounds:

The paper presents the first national-scale map of habitat suitability for a high-priority invasive species. We successfully integrate MODIS satellite data and tens of thousands field sampling points with high-performance computing to create a modeled distribution that is 90% accurate. The paper demonstrates the benefits of sharing information across state and federal agencies, non-government groups and Tribes, and the power of statistical spatial modeling to derive tools for the efficient and effective containment of harmful non-native species.

Appeal to non-scientific audience:

From ranchers and farmers to urban water users, and from gardeners to fisherman, many people are aware of the general concerns related to invasive plants, animals, and diseases. Further, many efforts, from federal agencies to grass-roots citizen coalitions, are concerned with tamarisk in particular. Indeed, the Secretaries of the Interior and Agriculture called for a “Cooperative Initiative to Control Invasive Tamarisk In Southwest” (January 22, 2004). Further, the approach presented here should be of interest to a wide audience interested in mapping harmful species in the US and globally.

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A tamarisk habitat suitability map for the continental US

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Abstract:

This paper presents a national-scale map of habitat suitability for a high-priority invasive species, Tamarisk (*Tamarix spp.*, salt cedar). We successfully integrate satellite data and tens of thousands of field sampling points through logistic regression modeling to create a habitat suitability map that is 90% accurate. This interagency effort uses field data collected and coordinated through the US Geological Survey and nation-wide environmental data layers derived from NASA's MODerate Resolution Imaging Spectroradiometer (MODIS). We demonstrate the utilization of the map by ranking the lower 48 US states (and the District of Columbia) based upon their absolute, as well as proportional, areas of "highly likely" and "moderately likely" habitat for Tamarisk. The interagency effort and modeling approach presented here could be applied to map other harmful species in the US and globally.